

DETAILED ACTION

This action is in response to the reply filed on October 26, 2009

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 1, 2 – 5, 9, 11, 14, 15, and 17 – 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burchard in view of Herrmann et al. (Herrmann; U.S. 6,428,051).

In regards to Claims 1, 14, and 15, Burchard security element comprising a cover layer 4 having gaps 5 in the form of characters (letters) or patterns forming visually and/or machine readable first information (Column 5, Lines 9 – 15, 21 – 25; Figure 7, Items 4, 5), wherein a printed image 8 in the form of letters, numbers or geometrical figures forming visually and/or machine readable second information is disposed within the gaps in register (Column 5, Lines 21 – 25; Figure 7, Item 8 shows letters) and furthermore wherein the security element is a security thread (Column 4, Lines 26 – 29) and further wherein the content of the second information within the gaps is different from the content first information of the respective gap within which the second information is disposed (Figure 7 shows the first information as the gaps of letters "P" and "L" and Column 5, Lines 21 - 25 teaches of the printing 8 being capable of being inside the first information. However, earlier in the patent in Column 4, Lines 39 – 47

the printing 8 separate from the gaps is taught can have **any** desired color design such as patterns of a flag and this would also have a different content as the first information is just negative writing where the second is positive along with additional information. The flag pattern is a different information than the mere indicia, the printing in the gaps provides an information that is the same but a second information of the flag that is different from the first information where the second information is within the gaps of the first information. Furthermore Column 4, Lines 36 – 47 teach of the same layers and inks as in Column 5, Lines 20 – 24 and the only difference in the embodiments is the location of the printing 8 and therefore the color design can inherently be used in this embodiment), and further wherein the form of the letters, numbers or geometrical figures forming the second information is different from the form of the characters or patterns forming the first information (The physical form of the letters in the second information are different because not only is it a positive image in the first information negative image, but it is also comprised of various different lines or colored portions which shows distinct physical patterns in forming the letters, number or geometrical figures of the second information). Furthermore, with respect to the digital printing, the structure of Burchard is capable of being digitally printed (as discussed later in the office action); even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is

unpatentable even though the prior product was made by a different process. In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Burchard does not disclose the information conveyed by the overall contour of the first information is different from an information conveyed by an overall contour of the second information where the form of the letters, numbers, or geometrical figures forming the second information is different from the form of the characters or patterns forming the first information.

Herrmann teaches of a security document having a security thread wherein the thread is provided with a first information provided as a geometrically shaped window 4 which is provided with a micro-printing 12 within the window which has a different shape from the first information (Column 6, Lines 45 – 52 and Figures 1 & 2, Item 4; Column 7, Lines 23 – 38 and Figures 1 & 2, Item 12). Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the teachings of micro-printing in openings in order to provide a well known alternative to printing within gaps in security threads.

If Applicant disagrees with the stance taken on Claims 1, 14, and 15 due to the embodiments, it is further noted that the layers of the embodiments remain the same as well as the printing. The only difference recited is the location of the printing 8 and areas in which it exists 7 (Column 4, Lines 36 – 47 and Column 5, Lines 21 - 25). It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the color printing methods as taught by Column 4, Lines 39 – 37 and Figure 2 to the embodiment of Column 5, Lines 21 – 25 and Figure 7 in order

to provide a higher resistance to forgery as well as greater aesthetic quality (Column 4, Lines 55 – 63).

In regards to Claim 2, Burchard modified by Herrmann further discloses wherein the cover layer is opaque at least in partial areas (Column 2, Lines 39 – 43; Column 4, Line 15 – 18; Burchard).

In regards to Claim 4, Burchard modified by Herrmann further discloses wherein the cover layer is semitransparent at least in partial areas (Column 1, Lines 7 – 12; Burchard).

In regards to Claim 5, Burchard modified by Herrmann further discloses the cover layer is a metallic coating (Column 4, Lines 35 – 38; Burchard). Although it is not disclosed that the metallic coating of aluminum, gold, copper, iron, nickel and an alloy containing one or more of said metals, the broad description of metallic encompasses such options.

In regards to Claim 9, Burchard modified by Herrmann further discloses wherein the printed image is finely structured and/or of high resolution (Figure 7, Item 8; The printed ink is very small inside the gap relative to the banknote it is on and therefore finely structured; Burchard).

In regards to Claim 11, Burchard modified by Herrmann further discloses wherein the printed image is multicolored or formed of inks with different pigment content (Column 4, Lines 38 – 44; Burchard)

In regards to Claim 12, Burchard modified by Herrmann further discloses wherein the printed image forms letters, numbers or geometrical figures (Column 5, Lines 21 – 25; Burchard).

In regards to Claim 17, Burchard modified by Herrmann further discloses the security element is on a security paper (Column 2, Lines 33 – 42; Burchard).

In regards to Claim 18, wherein the security element is present in the form of a thread or band (Column 4, Lines 26 – 29; Burchard).

In regards to Claim 19, Burchard modified by Herrmann further discloses wherein the security element is embedded into the security paper as a windowed security thread (Column 4, Lines 26 – 29; Burchard).

In regards to Claim 20, Burchard modified by Herrmann further discloses wherein the security element is disposed completely on the surface of the security paper (Column 4, Lines 29 – 34; Burchard).

In regards to Claim 21, Burchard modified by Herrmann further discloses wherein the document is a document of value having the security element (Column 4, Lines 26 – 27; Burchard).

In regards to Claim 22, Burchard modified by Herrmann further discloses wherein the printed image disposed in the gaps repeats the motif of another printed image of the security paper, such as, for example, a national flag, a denomination, a portrait or an architectural motif (Column 4, Lines 39 – 47 teaches of any color design and national flags for several countries are just color patterns without any other indicia; Burchard).

2. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Burchard in view of Herrmann and Schmitz et al. (Schmitz; U.S. 5,573,639).

In regards to Claim 3, as applied to Claim 1, Burchard modified by Herrmann does not disclose wherein the cover layer is screened at least in partial areas, said screen being selected from the group consisting of a dot screen, a line screen of and a screen of repeating similar screen elements.

Schmitz discloses a substrate 3 in a security element 2 having a cover layer 4 having a first information in a pattern and having a type of gap also in a pattern (Column 3, Lines 11 – 16, 24 – 26; Figure 1, Items 2, 3; Figure 2, Item 4). Schmitz further discloses machine readable or visual second information 5 with the first and second information being different (Column 3, Lines 26 – 30; Figure 2, Item 5). Schmitz further discloses wherein the cover layer is screened in at least partial areas by a group consisting of a dot screen, line screen, and a screen of repeating similar screen elements (Column 3, Lines 45 – 48). Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide with the screening of Schmitz in order to provide shapes and information that is recognizable (Column 3, Lines 48 – 52).

3. Claims 6, 7, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burchard in view of Herrmann and Heim (U.S. 2005/0151368 A1).

In regards to Claims 6, 7, and 27, Burchard modified by Herrmann does not disclose wherein the cover layer contains a dielectric layer structure that produces different color effects in reflected light upon a change of viewing angle and wherein the

dielectric layer structure is opaque or semitransparent and wherein the security element contains a plastic layer with a surface relief in the form of a diffraction structure embossed there into.

Heim teaches of a security element having a cover layer D and A₂ wherein gaps 9 exist which forms characters wherein the cover layer has a dielectric layer (Paragraph 0064, Lines 1 – 6; [designates "D" as Dielectric]; Figure 8, Items D, A₂ 9) provided on a substrate that is provided with a relief structure in the form of a diffraction structure that is embossed there into (Paragraph 0025, Lines 1 – 6; Figure 8, Item S). Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide the cover layer of Burchard with the cover layer of Heim and modify the substrate and cover layer with diffraction structures as taught by Heim in order to provide the security element of Burchard with a color changing capability (Paragraph 0064, last 5 lines) which provides a further security measure.

In regards to Claim 7, as applied to Claim 6, Burchard modified by Heim further discloses wherein the dielectric layer structure is opaque or semitransparent (Paragraph 0018, Lines 1 – 2; states that the materials are primarily transparent but do not have to be and therefore would be opaque or semi-transparent; Heim).

4. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burchard in view of Herrmann and Kaule et al. (U.S. 6,344,261)

In regards to Claims 10 and 11, as applied to Claim 1, Burchard modified Herrmann does not disclose wherein the printed image contains an ink containing

pigments selected from the group consisting of luminescent pigments, magnetic pigments, liquid crystal pigments and interference layer pigments.

Kaule et al. discloses of using luminescent substances in multicolor inks that are applied to a security thread (Column 4, Lines 65 – 67 → Column 5, Lines 1 – 6). Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide the printed image 8 ink with luminescent substances in order to provide a security thread with an additional authentication feature.

5. Claims 1, 16, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heim in view of Burchard and Hermann.

Heim discloses of a security element for a document of value (Paragraph 0047, Lines 1 – 2) having a cover layer D and A₂ wherein gaps 9 exist which forms characters and patterns [each character can be considered a different information; gaps is first information] wherein the cover layer has a dielectric layer (Paragraph 0064, Lines 1 – 6; Paragraph 0063, Lines 1 – 3 [designates "D" as Dielectric]; Figure 8, Items D, A₂ 9) wherein the security element further discloses a plastic layer with a surface relief 8 in the form of a diffraction structure embossed there into (Paragraph 0025, Lines 1 – 3; Paragraphs 0057 – 0059; Figure 5, item 8) and exists separate from a security thread and can exists as a label (Paragraph 0047, Lines 1 – 5; Figure 5, Item 2; Paragraph 0042; Paragraph 0045; Paragraph 0064, Lines 12 – 17).

Heim does not disclose wherein a printed image forming visually and or machine readable second information in the form of letters, numbers or geometrical figures is

disposed in the gaps, in register and different in content from the information represented by the gaps, and further wherein the form of the letters, numbers or geometrical figures forming the second information is different from the form of the characters or patterns forming the first information. Heim further does not disclose the second information is digitally printed.

In regards to Claims 1, 14, and 15, Burchard teaches a security element comprising a cover layer 4 having gaps 5 in the form of characters (letters) or patterns forming visually and/or machine readable first information (Column 5, Lines 9 – 15, 21 – 25; Figure 7, Items 4, 5), wherein a printed image 8 in the form of letters, numbers or geometrical figures forming visually and/or machine readable second information is disposed within the gaps in register (Column 5, Lines 21 – 25; Figure 7, Item 8 shows letters) and furthermore wherein the security element is a security thread (Column 4, Lines 26 – 29) and further wherein the content of the second information within the gaps is different from the content first information of the respective gap within which the second information is disposed (Figure 7 shows the first information as the gaps of letters "P" and "L" and Column 5, Lines 21 - 25 teaches of the printing 8 being capable of being inside the first information. However, earlier in the patent in Column 4, Lines 39 – 47 the printing 8 separate from the gaps is taught can have **any** desired color design such as patterns of a flag and this would also have a different content as the first information is just negative writing where the second is positive along with additional information. The flag pattern is a different information than the mere indicia, the printing in the gaps provides an information that is the same but a second information of the flag

that is different from the first information where the second information is within the gaps of the first information. Furthermore Column 4, Lines 36 – 47 teach of the same layers and inks as in Column 5, Lines 20 – 24 and the only difference in the embodiments is the location of the printing 8 and therefore the color design can inherently be used in this embodiment), and further wherein the form of the letters, numbers or geometrical figures forming the second information is different from the form of the characters or patterns forming the first information (The physical form of the letters in the second information are different because not only is it a positive image in the first information negative image, but it is also comprised of various different lines or colored portions which shows distinct physical patterns in forming the letters, number or geometrical figures of the second information). Furthermore, with respect to the digital printing, the structure of Burchard is capable of being digitally printed (as discussed later in the office action); even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide the information and color designs representing different information in the gaps of Heim in order to provide a higher resistance to forgery (Column 4, Lines 55 – 63). Furthermore, if applicant disagrees with the anticipation

nature of this disclosure, please refer to the 35 USC 103a rejection of Claims 1, 14, 15 and using Burchard.

Heim modified by Burchard does not disclose the information conveyed by the overall contour of the first information is different from an information conveyed by an overall contour of the second information where the form of the letters, numbers, or geometrical figures forming the second information is different from the form of the characters or patterns forming the first information.

Herrmann teaches of a security document having a security thread wherein the thread is provided with a first information provided as a geometrically shaped window 4 which is provided with a micro-printing 12 within the window which has a different shape from the first information (Column 6, Lines 45 – 52 and Figures 1 & 2, Item 4; Column 7, Lines 23 – 38 and Figures 1 & 2, Item 12). Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the teachings of micro-printing in openings in order to provide a well known alternative to printing different forms of information within gaps..

6. Claims 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burchard in view of Sakamoto et al. (Sakamoto; U.S. 6,352,804).

In regards to Claims 1, 14, and 15, Burchard modified by Hermann discloses security element comprising a cover layer 4 having gaps 5 in the form of characters (letters) or patterns forming visually and/or machine readable first information (Column 5, Lines 9 – 15, 21 – 25; Figure 7, Items 4, 5; Burchard), wherein a printed image 8 in the form of letters, numbers or geometrical figures forming visually and/or machine

readable second information is disposed within the gaps in register (Column 5, Lines 21 – 25; Figure 7, Item 8 shows letters; Burchard) and furthermore wherein the security element is a security thread (Column 4, Lines 26 – 29; Burchard) and further wherein the content of the second information within the gaps is different from the content first information of the respective gap within which the second information is disposed (Figure 7 shows the first information as the gaps of letters “P” and “L” and Column 5, Lines 21 - 25 teaches of the printing 8 being capable of being inside the first information. However, earlier in the patent in Column 4, Lines 39 – 47 the printing 8 separate from the gaps is taught can have **any** desired color design such as patterns of a flag and this would also have a different content as the first information is just negative writing where the second is positive along with additional information. The flag pattern is a different information than the mere indicia, the printing in the gaps provides an information that is the same but a second information of the flag that is different from the first information where the second information is within the gaps of the first information. Furthermore Column 4, Lines 36 – 47 teach of the same layers and inks as in Column 5, Lines 20 – 24 and the only difference in the embodiments is the location of the printing 8 and therefore the color design can inherently be used in this embodiment; Burchard), and further wherein the form of the letters, numbers or geometrical figures forming the second information is different from the form of the characters or patterns forming the first information (The physical form of the letters in the second information are different because not only is it a positive image in the first information negative image, but it is also comprised of various different lines or colored portions which shows

distinct physical patterns in forming the letters, number or geometrical figures of the second information; Burchard). Furthermore, if applicant disagrees with the anticipation nature of this disclosure, please refer to the 35 USC 103a rejection of Claims 1, 14, 15 and 22 using Burchard.

Burchard modified by Hermann does not disclose the information conveyed by the overall contour of the first information is different from an information conveyed by an overall contour of the second information where the form of the letters, numbers, or geometrical figures forming the second information is different from the form of the characters or patterns forming the first information and wherein the image in the gaps is printed by digital printing or wherein the printed image is produced in the gaps by a virtual printing method selected from the group consisting of digital printing such as ink jet, thermal sublimation or thermal transfer, a temporary digital printing method such as an electrophotographic method, ionography or magnetography, in particular by a toner-based printing method such as laser printing, and a liquid-ink method such as Indigo.

Herrmann teaches of a security document having a security thread wherein the thread is provided with a first information provided as a geometrically shaped window 4 which is provided with a micro-printing 12 within the window which has a different shape from the first information (Column 6, Lines 45 – 52 and Figures 1 & 2, Item 4; Column 7, Lines 23 – 38 and Figures 1 & 2, Item 12). Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use the teachings of micro-printing in openings in order to provide a well known alternative to printing within gaps in security threads.

Burchard modified by Hermann does not disclose wherein the image in the gaps is printed by digital printing or wherein the printed image is produced in the gaps by a virtual printing method selected from the group consisting of digital printing such as ink jet, thermal sublimation or thermal transfer, a temporary digital printing method such as an electrophotographic method, ionography or magnetography, in particular by a toner-based printing method such as laser printing, and a liquid-ink method such as Indigo.

Sakamoto et al. (Sakamoto; U.S. 6,352,804) teaches of providing a substrate 1 with a resin 2 which is hardened and has material removed forming gaps/image elements 4 wherein the gaps are then printed with an ink 5 by means on inkjet printing (Column 3, Lines 19 – 55; Figures 1A – 1E, Items 1, 2, 4, 5). Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide the gaps of Burchard with inkjet printing because such a printing provides a high accuracy of printing and control when printing the pattern (Column 3, Lines 49 – 52).

7. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Burchard in view of Sakamoto and Heim.

In regards to Claim 25, Burchard modified by Sakamoto does not disclose wherein the cover layer comprises a metal layer, and the metal layer is applied by vapor deposition or by electron-beam vaporization.

Heim teaches of a security element having a cover layer D and A₂ wherein gaps 9 exist which forms characters wherein the cover layer has a dielectric layer (Paragraph 0064, Lines 1 – 6; [designates "D" as Dielectric]; Figure 8, Items D, A₂ 9) provided on a

substrate that is provided with a relief structure in the form of a diffraction structure that is embossed there into (Paragraph 0025, Lines 1 – 6; Figure 8, Item S) wherein the dielectric layer can be vapor deposited (Paragraph 0018, Lines 1 – 5). Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide the cover layer of Burchard with the cover layer of Heim and modify the substrate and cover layer with diffraction structures as taught by Heim in order to provide the security element of Burchard with a color changing capability (Paragraph 0064, last 5 lines) which provides a further security measure.

Response to Arguments

Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

With respect to the combination of Hermann to Burchard and Heim, the prior art of Hermann merely shows that contours of indicia are well known to be different than that of gaps they are provided in security threads.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PRADEEP C. BATTULA whose telephone number is (571)272-2142. The examiner can normally be reached on Mon. - Thurs. & alternating Fri. 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dana Ross can be reached on 571-272-4480. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. C. B./
Examiner, Art Unit 3725
January 10, 2010

/Dana Ross/
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